

What is claimed is:

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1. A sound signal analyzing device comprising:  
an input section that receives a sound signal;  
a characteristic extraction section that extracts a characteristic of the sound signal received by said input section; and  
a setting section that sets various parameters for use in analysis of the sound signal, in accordance with the characteristic of the sound signal extracted by said characteristic extraction section.
2. A sound signal analyzing device as recited in claim 1 wherein said characteristic extraction section extracts a volume level of the sound signal as said characteristic, and said setting section sets a threshold value for use in the analysis of the sound signal, in accordance with the volume level extracted by said characteristic extraction section.
3. A sound signal analyzing device as recited in claim 1 wherein said characteristic extraction section extracts upper and lower pitch limits of the sound signal as said characteristic, and said setting section sets a filter characteristic for use in the analysis of the sound signal, in accordance with the upper and lower pitch limits extracted by said characteristic extraction section.

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4. A sound signal analyzing device as recited in claim 1 which further comprises a display section that visually displays the characteristic of the sound signal extracted by said characteristic extraction section.

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5. A sound signal analyzing device as recited in claim 4 wherein said setting section includes an operator member operable by a user, and said setting section, in response to operation of the operator member by the user, confirms the characteristic of the sound signal displayed by said display section and thereby sets a state of the characteristic as a predetermined type of parameter.

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6. A sound signal analyzing device comprising:  
an input section that receives a sound signal;  
a pitch extraction section that extracts a pitch of the sound signal received by said input section;  
a scale designation section that sets a scale determining condition; and  
a note determination section that, in accordance with the scale determining condition set by said scale designation section, determines a particular one of scale notes which the pitch of the sound signal extracted by said pitch extraction section corresponds to.

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7. A sound signal analyzing device as recited in claim 6 wherein said scale designation section can select one of a 12-tone scale and a 7-tone scale as the scale

determining condition.

8. A sound signal analyzing device as recited in claim 7 wherein to select the 7-tone scale, said scale designation section can select one of a normal scale determining condition for only determining diatonic scale notes and an intermediate scale determining condition for determining non-diatonic scale notes as well as the diatonic scale notes.

9. A sound signal analyzing device as recited in claim 8 wherein said note determination section sets frequency ranges for determining the non-diatonic scale notes to be narrower than frequency ranges for determining the diatonic scale notes.

10. A sound signal analyzing device as recited in claim 6 which further comprises:

a setting section that sets unit note length as a predetermined criterion for determining a note length; and

a note length determination section that determines a length of the scale note determined by said note determination section with an accuracy of the unit note length.

11. A sound signal analyzing method comprising the steps of:

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receiving a sound signal;  
extracting a characteristic of the sound signal  
received by said step of receiving; and  
setting various parameters for use in analysis of  
the sound signal, in accordance with the characteristic of  
the sound signal extracted by said step of extracting.

12. A sound signal analyzing method comprising the steps  
of:

receiving a sound signal;  
extracting a pitch of the sound signal received by  
said step of receiving;  
setting a scale determining condition; and  
in accordance with the scale determining condition  
set by said step of setting, determining a particular one  
of scale notes which the pitch of the sound signal  
extracted by said step of extracting corresponds to.

13. A sound signal analyzing method as recited in claim  
12 which further comprises:

a step of setting a unit note length as a  
predetermined criterion for determining a note length;  
and

a step of determining a length of the scale note  
determined by said step of determining a particular one of  
scale notes, with an accuracy of the unit note length.

14. A machine-readable medium containing a group of

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instructions of a sound signal analyzing program for execution by a computer, said sound signal analyzing program comprising the steps of:

- receiving a sound signal;
- extracting a characteristic of the sound signal received by said step of receiving; and
- setting various parameters for use in analysis of the sound signal, in accordance with the characteristic of the sound signal extracted by said step of extracting.

15. A machine-readable medium containing a group of instructions of a sound signal analyzing program for execution by a computer, said sound signal analyzing program comprising the steps of:

- receiving a sound signal;
- extracting a pitch of the sound signal received by said step of receiving;
- setting a scale determining condition; and
- in accordance with the scale determining condition set by said step of setting, determining a particular one of scale notes which the pitch of the sound signal extracted by said step of extracting corresponds to.

16. A machine-readable medium as recited in claim 15 which further comprises:

- a step of setting a unit note length as a predetermined criterion for determining a note length;
- and

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a step of determining a length of the scale note determined by said step of determining a particular one of scale notes, with an accuracy of the unit note length.

17. A method of receiving a sound signal and automatically representing the sound signal in musical notation, said method comprising:

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a first step of receiving at least part of a sound signal to be represented in musical notation, extracting a characteristic of the received sound signal, and setting various parameters for use in analysis of the sound signal in accordance with the extracted characteristic;

a second step of setting a scale determining condition;

a third step of receiving a sound signal to be represented in musical notation and determining a pitch of the sound signal using the various parameters set by said first step; and

a fourth step of, in accordance with the scale determining condition set by said second step, rounding the pitch determined by said third step to any one of scale notes corresponding to the scale determining condition.

18. A method as recited in claim 17 which further comprises:

a step of setting a unit note length as a predetermined criterion for determining a note length; and

a step of determining a length of the scale note determined by said fourth step from the received sound signal, with an accuracy of the unit note length.

19. A machine-readable medium containing a group of instructions of a program for receiving a sound signal and automatically representing the sound signal in musical notation via a computer, said program comprising:

a first step of receiving at least part of a sound signal to be represented in musical notation, extracting a characteristic of the received sound signal, and setting various parameters for use in analysis of the sound signal in accordance with the extracted characteristic;

a second step of setting a scale determining condition;

a third step of receiving a sound signal to be represented in musical notation and determining a pitch of the sound signal using the various parameters set by said first step; and

a fourth step of, in accordance with the scale determining condition set by said second step, rounding the pitch determined by said third step to any one of scale notes corresponding to the scale determining condition.

20. A device for receiving a sound signal and automatically representing the sound signal in musical notation, said device comprising:

a first section that receives a sound signal having

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a sound characteristic to be represented in musical notation, extracts a characteristic of the received sound signal, and sets various parameters for use in analysis of the sound signal in accordance with the extracted characteristic;

a second section that sets a scale determining condition;

a third section that receives a sound signal to be represented in musical notation and determines a pitch of the sound signal using the various parameters set by said first section; and

a fourth section that, in accordance with the scale determining condition set by said second section, rounds the pitch determined by said third section to any one of scale notes corresponding to the scale determining condition.

21. A device as recited in claim 20 which further comprises a setting section that sets a unit note length as a predetermined criterion for determining a note length; and

a section that determines a length of the scale note determined by said fourth section from the received sound signal, with an accuracy of the unit note length.

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